

## Claims

[1] A saddle-riding type vehicle comprising:

a head pipe that supports a steering shaft to rotationally move freely;

a body frame including a main frame that is connected to the head pipe and extends obliquely downward to a rear and a pair of left and right sub-frames that are connected to the main frame and extend obliquely downward to the rear; and

a motor supported by the main frame and the respective sub-frames in a suspended state.

[2] A saddle-riding type vehicle according to claim 1, wherein a connecting portion of the main frame and the sub-frames is located ahead of a portion supporting the motor in the main frame.

[3] A saddle-riding type vehicle according to claim 1 or 2, wherein

the head pipe is connected to a front end side of the main frame, and

a cross sectional area of the main frame changes along a longitudinal direction of the main frame such that the front end side is larger than a rear end side.

[4] A saddle-riding type vehicle according to any one of claims 1 to 3, wherein the main frame supports the motor at the rear end of the main frame.

[5] A saddle-riding type vehicle according to any one of

claims 1 to 4, wherein the sub-frames are bent convexly downward and support the motor at least in one place near bent portions.

[6] A saddle-riding type vehicle according to any one of claims 1 to 5, wherein the sub-frames are bent convexly downward and support the motor at least in one place further on a rear side than the bent portions.

[7] A saddle-riding type vehicle according to any one of claims 1 to 6, wherein

the saddle-riding type vehicle includes:

a rear wheel; and

rear arms that support the rear wheel and extend substantially in a front to rear direction,

the sub-frame is bent convexly downward, and

both a part of the motor and the rear arms are supported at the rear ends of the sub-frames.

[8] A saddle-riding type vehicle according to any one of claims 1 to 7, wherein

the sub-frames are bent convexly downward, and

the saddle-riding type vehicle includes rear side frames that are connected to a portion further on the rear side than the bent portions of the sub-frames and extend obliquely upward to the rear.

[9] A saddle-riding type vehicle according to any one of claims 1 to 7, wherein

the saddle-riding type vehicle include plural rear side

frames that are connected to the rear ends of the sub-frames, respectively, to extend obliquely upward to the rear and are connected to one another.

[10] A saddle-riding type vehicle according to claim 8 or 9, wherein the sub-frames support the motor at least in one place near connecting portions to which the rear side frames are connected.

[11] A saddle-riding type vehicle according to any one of claims 1 to 10, wherein

the motor consists of an internal combustion engine having a crankcase and a cylinder that extends forward or obliquely upward to the front from the crankcase,

the cylinder is supported by the main frame, and

the crankcase is supported by the sub-frames.

[12] A saddle-riding type vehicle according to claim 11, wherein

the cylinder extends obliquely upward to the front from the crankcase such that an axis of the cylinder extends obliquely in an upward direction,

the sub-frames are bent convexly downward, and

front side portions further on the front side than the bent portions in the sub-frames extend substantially parallel to the axis of the cylinder.

[13] A saddle-riding type vehicle according to claim 11, wherein

the cylinder extends obliquely upward to the front from the crankcase such that the axis of the cylinder extends obliquely in the upward direction,

the sub-frames are bent convexly downward, and

the bent portions of the sub-frames are located above a boundary portion of the cylinder and the crankcase in the internal combustion engine.

[14] A saddle-riding type vehicle comprising:

a head pipe that supports a steering shaft to rotationally move freely;

a body frame including a main frame that is connected to the head pipe and extends obliquely downward to the rear and a pair of left and right sub-frames that are connected to the main frame and extend obliquely downward to the rear; and

a motor supported in positions of two places separated in a front to rear direction in the respective sub-frames in a suspended state.

[15] A saddle-riding type vehicle according to claim 14, wherein

the motor consists of an internal combustion engine including a crankcase and a cylinder that extends forward or obliquely upward to the front from the crankcase,

the cylinder is supported by the main frame, and

the crankcase is supported by the sub-frames.

[16] A saddle-riding type vehicle comprising:

a head pipe that supports a steering shaft to rotationally move freely;

a body frame that extends obliquely downward to the rear from the head pipe; and

a motor supported by the body frame in a suspended state, wherein the body frame includes at least a pair of left and right side frames, and

the saddle-riding type vehicle includes:

a rear wheel;

rear arms that support the rear wheel and extend substantially in a front to rear direction;

left and right brackets fixed to the left and the right side frames, respectively; and

a pivot shaft that pierces through both the brackets, both the rear arms, and the motor and attaches both the rear arms and the motor to both the brackets in a state in which the left and the right brackets are interposed between the left and the right rear arms and the motor, respectively.

[17] A saddle-riding type vehicle according to claim 16, wherein

the body frame includes a main frame that is connected to the head pipe and extends obliquely downward to the rear and a pair of left and right sub-frames that are connected to the main frame and extend obliquely downward to the rear, and

the side frames consist of the sub-frames.

[18] A saddle-riding type vehicle according to claim 17,  
wherein a part of the motor is supported by the main frame.